

- 1           1.    A method comprising:  
2                   forming an analog memory using a phase change  
3   material.
- 1           2.    The method of claim 1 including selectively  
2   enabling either digital or analog data to be stored in said  
3   memory.
- 1           3.    The method of claim 1 including forming a phase  
2   change material having a programmably variable resistance  
3   for a plurality of cells.
- 1           4.    The method of claim 3 including enabling said  
2   cells to be addressably located along rows and columns.
- 1           5.    The method of claim 1 including forming a phase  
2   change material in a pore.
- 1           6.    The method of claim 5 including forming a  
2   selection device to enable the control of current through  
3   said phase change material.
- 1           7.    The method of claim 1 including enabling said  
2   memory to store in a single cell one of at least three  
3   different resistance values.

1           8.    The method of claim 7 including enabling the  
2 resistance of the cell to be set by varying the magnitude  
3 of a programming current to the cell.

1           9.    The method of claim 8 including enabling the  
2 resistance of the cell to read and readjust using a  
3 different programming current.

1           10.   The method of claim 9 including enabling a  
2 resistance to be set in said cell proportional to a voltage  
3 or current characteristic to be stored.

1           11.   A memory comprising:  
2                a phase change material; and  
3                a circuit to write analog data using said phase  
4 change material.

1           12.   The memory of claim 11 including a circuit to  
2 selectively enable either digital or analog data to be  
3 stored in said memory.

1           13.   The memory of claim 11 wherein said phase change  
2 material has a programmably variable resistance.

1           14.   The memory of claim 13, said memory to store  
2 digital and analog data.

1        15. The memory of claim 14 wherein said memory to  
2 selectively store digital or analog data.

1        16. The memory of claim 15 including a circuit to  
2 enable a user to select analog or digital data storage.

1        17. The memory of claim 16 including an analog read  
2 sense amplifier, a digital read sense amplifier, an analog  
3 write circuit, and a digital write circuit.

1        18. The memory of claim 11 including a substrate, an  
2 insulator formed over said substrate, a pore defined in  
3 said insulator, and a phase change material in said pore.

1        19. The memory of claim 11 including a plurality of  
2 cells including a phase change material, said memory  
3 including a plurality of conductive lines to selectively  
4 enable access to said cells.

1        20. The memory of claim 19 wherein said phase change  
2 material includes a chalcogenide.

1        21. A system comprising:  
2            a processor;  
3            a wireless interface coupled to said processor;  
4 and

5           a semiconductor memory coupled to said processor,  
6   said memory including a phase change material and a circuit  
7   to write analog data for storage using said phase change  
8   material.

1           22. The memory of claim 21 including a circuit to  
2   selectively enable either digital or analog data to be  
3   stored in said memory.

1           23. The system of claim 21, said memory to store  
2   digital and analog data.

1           24. The system of claim 23 wherein said memory to  
2   selectively store digital or analog data.

1           25. The system of claim 24 including a circuit to  
2   enable a user to select analog or digital data storage.